REMARKS

Claims 1 and 14 have been amended to clarify that the catalyst-bearing particles penetrate the pores of the porous wall by a distance not greater than 25%.

Claim Rejection based upon Voss et al. and Canadian Patent No. 2,299,602

Claims 1, 3-8, and 13-16 were rejected under 35 U.S.C. § 103 as unpatentable over United States Patent Application No. 2003/01243037 by Voss et al., in view of Canadian Patent No. 2,299,602.

Applicant's method as set forth in claim 1 is for making a diesel particulate filter and has two significant aspects. Catalyst-bearing particles are formed that have a uniform composition. This is accomplished by applying a promoter oxide onto a refractory particle and impregnating with a noble metal catalyst. The particles are then sized and applied so that the particles penetrate the wall of the substrate, but remain near the inlet surface to enhance the effectiveness of the catalyst and promoter oxide in regenerating the filter. This is accomplished by sizing the particles so that the particle size is 10% to 80% of the pore size (preferably 20% to 50% per claim 3, and more preferably 25% to 35% per claim 4). The references do not show particles that have a uniform composition and are sized to penetrate the wall but remain near the surface, so as to achieve an optimum distribution of promoter oxide and catalyst within the diesel particulate filter.

Voss et al. is cited to show a diesel particulate filter. However, Voss et al. teaches to apply a coating to the surface of the substrate. Paragraph 0075 starts off, "When the catalytic material is applied as a thin coating or coatings to a suitable carrier, such as described above,..." Voss et al. is silent as to particle size for the coating material. Thus, when fairly read, Voss et al. does not lead the practitioner to size the particles to penetrate the pores, as opposed to a coating that remains on the surface. More particularly, Voss et al. does not teach or suggest sizing the particles to an average diameter of 2 to 10 micrometer and 10% to 80% of the pore size. Without this feature, Voss et al. cannot point to Applicant's invention in claim 1.

The rejection acknowledges that Voss et al. shows only a general method of preparation, and relies upon the Canadian patent to disclose the steps of Applicant's method. However, the Canadian patent describes a catalyst element for treating exhaust gas that flows through the longitudinal channels without passing through the wall, in marked contrast to the wall-flow of a diesel particulate filter. As the practitioner would readily appreciate, in the type of catalytic unit described by the Canadian patent, there is no purpose to penetrating the catalyst material into the pores and out of contact with the gas flowing through the channels. The Office Action points out that the Canadian patent describes milling the particles to a size of 2 to 5 micrometers. However, it applies them to a dense surface that does not have the porosity that characterizes a wall-flow substrate that is used in a diesel particulate filter. Thus the Canadian patent, like Voss et al., is directed to applying a coating to the surface and does not teach or suggest to size the

particles relative to the average pore size in the substrate so as to achieve penetration of the surface.

The combination of the references thus fails to show Applicant's method. Both Voss et al. and the Canadian patent describe compositions that are applied as a coating that is a layer on the surface. The rejection contends that the recitation in claim 1 that the particles penetrate "less than or equal to" 25% of the thickness of the porous wall reads on 0 penetration. Applicants disagree. A fair reading of the language in claim 1 is that the catalyst-bearing particles penetrate within the pores of the porous wall, and that this penetration is limited to a recited portion of the wall. Moreover, the key question is whether the method in claim 1 is obvious from the teachings of the references. Since both references teach coatings applied to surfaces, they do not contemplate sizing the particles to less than the average pore size. More particularly, they do not point to sizing the particles to a particle size between 10% and 80% of the average pore size so that the particles can and do penetrate into the pores. Without these features, the references, even when combined, do not lead the practitioner on an obvious course to Applicant's method in claim 1.

Claims 3, 4, 6-8, and 13 dependent upon claim 1 and so not taught or suggested by the references at least for the reasons set forth with regard to that claim, but include additional features preferred in the practice of Applicants' invention. In particular, claim 3 calls for an average particle size of about 20% to about 50% of the average pore size. See paragraphs 0028 and 0040. The references do not teach or suggest sizing the

particles within this range. Claim 4 is directed to the preferred range of about 25% to about 35%, which narrow range is also not disclosed in the references.

Claim 14 and dependent claims 15 and 16 recite steps similar to claim 1, including that the catalyst-bearing particles are sized to an average diameter of about 2 micrometers to about 10 micrometers, that the particle size is about 10% to about 80% of the average pore size of the wall-flow substrate, and that the sized particles are applied to the inlet wall surface so as to cause the particles to penetrate within pores of the porous wall. For the reasons herein, these features are not taught of suggested by the references.

Accordingly, it is respectfully requested that the rejection of the claims based upon Voss et al. and the Canadian patent be reconsidered and withdrawn, and that the claims be allowed.

Conclusion

If it would further prosecution of the application, the Examiner is urged to contact the undersigned at the phone number provided.

The Commissioner is hereby authorized to charge any fees associated with this communication to Deposit Account No. 50-0831.

Respectfully submitted,

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